



## TESTING OF FH BRUNDLE PRO RAILING STAINLESS STEEL HANDRAIL COMPONENTS TO BS6399: Part 1

### 1.0 INTRODUCTION

A series of stainless steel handrail components supplied in 304 and 316 material were tested for their ability to sustain horizontal imposed loads and to allow categorisation to BS 6399:Part 1 1996. Loading for Buildings. Code of practice for dead and imposed loads.

### 2.0 TEST SAMPLES

Two thickness of uprights 42.4mm and 48.3mm diameter, with handrail brackets with adjustable spigot glued and mechanically fixed to the uprights, were supplied with 3 types of floor fixings and one type of wall mounted bracket.

The product reference codes as supplied by Brundle are as follows:

Handrail brackets	312CC for 42.4mm 312DD for 48.3mm
External fit grub screw base plate	209C for 42.4mm 209D for 48.3mm
Weld on round base plate	207C for 42.4mm 207D for 48.3mm
Internal fit round floor base	211C for 42.4mm 211D for 48.3mm
Wall mounted Baluster bracket	212C for 42.4mm 212D for 48.3mm

Note 1: The base plate was additionally glued onto the upright.

### 3.0 TEST PREPERATION

Two of each of one type of base plate were securely bolted to the laboratory strong floor at nominally 1000mm centres and the appropriate uprights and handrail were secured in position. A horizontal imposed load was applied to the whole length of handrail bracket at nominally 1100mm above the floor height. The load was measured using a calibrated load cell.

### 4.0 RESULTS

BS 6399 Part 1 categorises situations for use of handrails depending on their ability to sustain defined horizontal uniformly distributed line loads. The loads achieved by the FH Brundle pro railing system allows the following categories:

Component Type	Type of occupancy for part of the Building or Structure	Examples of Specific Use	Horizontal Uniformly Distributed Line Load (kN/m)
Grub screw base plate 42.4mm	<b>Area A</b> Domestic and residential activities	All areas within or serving exclusively one dwelling including stairs, landings etc but excluding balconies	0.36
Grub screw base plate 48.3mm			
Grub screw base plate 42.4mm with additional glueing	<b>Area A, B and E</b> Offices and work areas not included elsewhere including storage areas	Light access stairs and gangways, light pedestrian traffic routes in industrial buildings except designated escape routes, areas not susceptible to overcrowding in office an institutional buildings	0.74
Grub screw base plate 42.4mm with additional glueing			
Weld on round base plate 42.4mm	<b>Areas A,B, E and C1, C2 and C3</b> Areas where people may congregate, areas with fixed seating, areas susceptible to overcrowding	Restaurants and bars with fixed seating, footways or pavements less than 3m wide with sunken areas	1.5
Weld on round base plate 48.3mm			
Internal fit round base plate 42.4mm			
Internal fit round base plate 48.3mm			
Wall mounted baluster bracket 42.4mm	<b>Areas A,B, E and C1, C2 and C3</b> Areas where people may congregate, areas with fixed seating, areas susceptible to overcrowding	Restaurants and bars with fixed seating, footways or pavements less than 3m wide with sunken areas	1.5
Wall mounted baluster bracket 48.3mm			

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